Remarks/Arguments:

The present invention is related to driving a plasma display panel. Specifically, during an initialization period, descending ramp waveform and square wave which reverse polarity are applied to control wall charge.

On page 2, the Official Action rejects claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Nakamura (U.S. Publication No. 2002/0021264) in view of Kim (U.S. Patent No. 7,109,951). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

Kim teaches a method and apparatus for driving a plasma display panel. Specifically, Kim teaches applying rectangular pulses in order to control wall charge. In related art, Nakamura teaches a driving method for plasma display panels. Specifically, Nakamura teaches an ascending ramp and a descending ramp in a priming discharge.

Applicants' invention, as recited by claim 1, includes a feature which is neither disclosed nor suggested by the art of record, namely:

> **application of a descending waveform voltage, which is ranging from a voltage with the same polarity as the voltage applied during the former half part of initialization period to a voltage reverse in polarity thereto ...**
>
> **... application of a rectangular waveform voltage, reverse in polarity to the voltage applied during the first initialization period, followed by supplying it with a rectangular waveform voltage reverse in polarity ...**

Claim 1 relates to the application of a descending ramp waveform and a square waveform which charge between positive and negative polarity in order to control wall charge. Specifically, the voltages are applied in an abnormal charge erasing part in order to control wall charge. This feature is found in the originally filed application on pages 9 and 10 and furthermore in Fig. 4 as the latter half part and the abnormal charge erasing part. No new matter has been entered.

In Fig. 9, Nakamura teaches a priming discharge, that consists of an ascending ramp and a descending ramp. Nakamura's descending ramp starts from a positive voltage and then descends to ground (it **does not change polarity**). Furthermore, Nakamura fails to disclose the abnormal discharge part as stated by the Examiner on page 3 of the Official Action.

On page 3, the Official Action suggests that Kim discloses the abnormal charge erasing part as recited in Applicants' claim 1. Specifically, Fig. 8 of Kim shows a wall charge control portion where a **positive** square wave is applied. Kim's positive square wave to control wall charge is always positive and then returns to ground (it **does not change polarity**).

Applicants' claim 1 is different than Nakamura and Kim because of the application of a descending ramp waveform and a rectangular ramp waveform which **change polarity** in order to control wall charge ("descending ramp waveform voltage, which is ranging from a voltage *with* the same polarity as the voltage applied during the former half part of the initialization. To a voltage reverse in polarity thereto ... rectangular waveform voltage, reversed in polarity to the voltage applied during the first initialization. Followed by supplying it with a rectangular waveform voltage reverse in polarity"). Applicants' wall charge control is described on page 9, line 7 to page 10, line 24 in reference to Fig. 4 ("in the latter half part ... a descending *ramp* waveform forward is gradually decreasing from voltage Vg to voltage Va is applied to scan electrodes ... in the abnormal charge erasing part ... after positive voltage Vm smaller than a discharge starting voltage is applied for 5-20 microseconds, negative voltage Va is applied for a short period up to 3 microseconds").

This important feature is shown in the Explanatory Figure enclosed, wherein Applicants' Fig. 4 shows a descending ramp which goes from positive to negative polarity and a rectangular waveform which goes from positive to negative polarity. In contrast, Nakamura teaches a descending ramp that is always positive and does not teach the abnormal charge erasing part. Kim's wall charge control applies an always positive rectangular waveform (his rectangular waveform does not go from positive voltage to negative voltage).

It is because Applicants include the feature of "application of a *descending* ramp waveform voltage, which is ranging from voltage with the same polarity as the voltage applied during the formal half part of initialization, to a voltage reverse in polarity thereto ... rectangular waveform voltage, reverse in polarity to the voltage applied during the first initialization. Followed by supplying it with a rectangular waveform voltage reversed in polarity", the

following advantages are achieved. An advantage is the ability to erase abnormal charge of a discharge cell which has accumulated abnormal wall charge in the scan electrode. Also, an advantage is to prevent the discharge cell from performing faulty discharge during the sustain period, thereby realizing high quality image display. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

In view of the amendments and arguments set forth above, the above identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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Enclosure: Explanatory Figure

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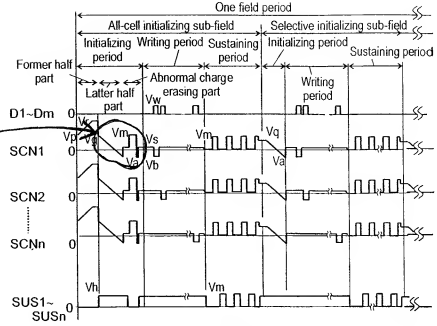
FIG. 4

① Descending Ramp which goes from positive to negative polarity.

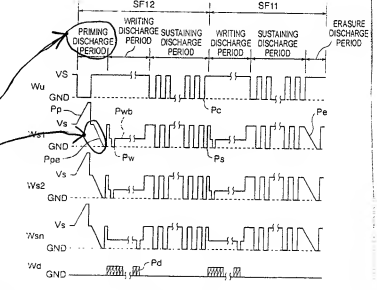
② Rectangular waveform which goes from positive (Vm) to negative (Va) polarity.



Nakamura

FIG. 9

① Descending ramp is always positive and there is no rectangular waveform in the priming period to control wall charge



Kim

FIG. 8

① Rectangular Waveform for wall charge control is always positive in polarity